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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,210	02/27/2004	Thomas J. Plona	26.0273 US	9128

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Intellectual Property and Legal Department
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Kanagawa-ken, 229-0006
JAPAN

EXAMINER

HUGHES, SCOTT A

ART UNIT	PAPER NUMBER
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3663

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/789,210	Applicant(s) PLONA ET AL	
	Examiner Scott A. Hughes	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,5,7-18,20-54 and 58-76 is/are pending in the application.
- 4a) Of the above claim(s) 20-54,62-73 and 75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4,5,7-18,58-61,74 and 76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/27/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/9/2006 has been entered.

Response to Arguments

Applicant's arguments filed 11/9/2006 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the amended limitations in the newly added claims are not persuasive as the new limitations are directed to subject with was not described by or enabled by the specification (see 35 USC 112 rejections below).

Applicant's arguments that the Kimball reference does not "generate a slowness-versus-frequency dispersion curve for each depth from acquired sonic data" because Kimball selects a previously stored modeled curve that is most closely matches the actual dispersion curve of the model. This argument is not persuasive, as the claim limitation of "generate a slowness-versus-frequency dispersion curve for each depth from acquired sonic data" is a broad limitation that does not state how the dispersion curve is generated. Since "generated" is a broad term, selecting a model curve that

most closely matches the actual dispersion curve is a method of generating a curve for each depth (the model curve is the generated dispersion curve since it is selected, and therefore generated).

Applicant's arguments that Kimball does not display the generated dispersion curves versus depth are not persuasive (see 35 USC 112 rejections below). Applicant argues that Kimball shows slowness versus depth. From applicant's cited Figs. 4-6, it appears that applicant is also displaying slowness vs. depth (See for example Fig. 4D).

Election/Restrictions

Applicant argues that newly submitted claims 75 and 76 (which replace previous claims 19 and 55) should be joined with the group of claims depending from and including newly submitted claim 74 (which replaces previously elected claim 1). Applicant argues that the new independent claims are related to the method of claim 74 and cannot be performed by hand (as was the reasoning in the prior restriction requirement). Applicant argues that new method claim 74 contains the limitation of acquiring sonic logging data at a plurality of depth in a borehole, thereby requiring a receiver or other means in the borehole to receive data. Although this one step in the method claim can be performed by hand, the method limitations do not imply that all of the method steps can only be done with the apparatus claimed claims 75 and 76, and not by hand. The processing step of the method can still be performed by hand. Claim 76, which contains "means for" linking claim language, and its dependent claims will be

rejoined with claim 74 and its dependent claims. Upon allowance of a linking claim, the apparatus claim 75 and its dependent claims 20-36 will be rejoined (See MPEP 809).

Since applicant has received an action on the merits for the originally presented invention, this invention (claim 74 and its dependent claims and "means for" claim 76 and its dependents) has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 75 and its dependent claims 20-36 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the display of "the generated slowness-versus-frequency dispersion curve for each depth versus depth." must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 74, 76, 4-5, 7-18, and 58-61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 74, 76, 4-5, 7-18, and 58-61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The independent claims contain the limitation of displaying or a display to display "the generated slowness-versus-frequency dispersion curve for each depth versus depth." There is no support for this limitation in the specification or the drawings. The drawings and specification describing the drawings, specifically Figs. 4A-F through 6A-F cited by applicant as containing support for the limitation, disclose a display of dispersion curves and a separate display of a slowness versus depth, where the slowness is projected from the dispersion curve data of other figures. There is no display of "slowness versus frequency dispersion curve for each depth versus depth" in the figures of described in the specification.

For example, the specification (Paragraph [0034] of PGPub of the application) does disclose that, "a log of the projections of dispersion curve data across multiple depths is displayed in an easy to read visual format. As shown in the embodiment of Fig. 4D, the horizontal axis of the graphical display 460 corresponds to wave slowness (in ps/ft), and the vertical axis corresponds to depth (in $\text{ft} \cdot 10^4$). This, for example, the slowness data at depth $1.5457 \cdot 10^4$ feet (shown at 465) corresponds to the slowness-frequency projected compressional and dipole flexural data derived from the slowness vs. frequency dispersion curve data of Fig. 4A."

From this section of the disclosure, as well as the parts relating to Figs. 5 and 6 (Pages 3-5 of the PGPub of this application), it appears that the data that is displayed versus depth is a projection of the dispersion curves and is derived from the dispersion curve data. Thus, the actual dispersion curves are not shown to be displayed versus depth as claimed in the new independent claims. The projection of the dispersion

curves to give slowness vs. depth information is not the same as displaying the dispersion curve vs. depth. Further, data derived from the dispersion curves that is then displayed vs. depth is not the same as the claim limitation of displaying dispersion curves vs. depth.

It is noted that applicant's original claims and the amended claims acted upon in the last action contained language of "dispersion curve information" and "projecting the dispersion curve information onto a slowness axis" and then displaying a log of this projected slowness data vs. depth on a display with axes of depth and slowness. These original claims that deal with "dispersion curve information" and "projecting the dispersion curve information" are different in scope and meaning from applicant's new limitations of displaying or a display to display "the generated slowness-versus-frequency dispersion curve for each depth versus depth." There is support for displaying dispersion curve information (information relating to or derived from the dispersion curve data) vs. depth, but there is not support for displaying the dispersion curves vs. depth as is now claimed.

Further limitations in the dependent claims relating to the "displayed dispersion curves" are rejected for the same reasons as stated above with regard to a display of dispersion curves vs. depth.

As there is no support for these new claim limitations as discussed above, the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the

time the application was filed, had possession of the claimed invention and are rejected under 35 USC 112 1st paragraph.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 74, 76, 4-5, 7-18, and 58-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims contain the limitation of displaying "the generated slowness-versus-frequency dispersion curve for each depth versus depth." This limitation is indefinite because it is unclear how the dispersion curves are displayed on a display versus depth (see 35 USC 112 1st paragraph rejection above for explanation).

For the purpose of compact prosecution, the new claim limitations will be examined as best interpreted by the examiner as relating to a display of dispersion curve information vs. depth instead of relating to a display of dispersion curves vs. depth, which is not described in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 74, 76, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimball (5278805).

With regard to claim 74, Kimball discloses a method displaying sonic logging data associated with an earth formation surrounding a borehole (abstract). Kimball discloses acquiring sonic data at a plurality of depths in a borehole (Figs. 1, 6) (Column 4, Line 35 to Column 5, Line 40). Kimball discloses processing the acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth Figs. 3a,b; 4) (abstract; Column 4, Lines 35-55; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10). Kimball discloses displaying the generated slowness-versus-frequency dispersion curve for each depth versus depth (Figs. 3a,b; 4; 6) (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10).

With regard to claim 76, Kimball discloses a system for displaying sonic logging data associated with an earth formation surrounding a borehole (abstract). Kimball discloses means for acquiring sonic data at a plurality of depths in a borehole (Figs. 1, 6) (Column 4, Line 35 to Column 5, Line 40). Kimball discloses means for processing the acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth Figs. 3a,b; 4) (abstract; Column 4, Lines 35-55; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10). Kimball discloses means for displaying associated with the processing means and configured or designed to display the generated slowness-versus-frequency dispersion curve for each depth versus depth

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(Figs. 3a,b; 4; 6) (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10).

With regard to claim 7, Kimball discloses that the displayed slowness-versus-frequency dispersion curve includes projected slowness-versus-frequency dispersion curve displayed in one dimension (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10) (Fig. 6).

With regard to claim 8, Kimball discloses that the displayed dispersion curve includes dipole flexural information which has been projected onto a slowness axis (Column 7, Lines 25-55; Columns 13-15).

With regard to claim 9, Kimball discloses that the displayed dispersion curve includes dipole compressional information that has been projected onto a slowness axis (Columns 1; 13).

With regard to claim 10, Kimball discloses that the acquired sonic data corresponds to sonic logging data generated by at least one source selected from the group consisting of a dipole source, a monopole source, and a quadrapole source (Column 4, Line 35 to Column 5, Line 40; Column 7, Lines 15-45).

With regard to claim 11, Kimball discloses that the acquired sonic data corresponds to sonic logging data selected from the group consisting of fast dipole shear data, slow dipole shear data, low-frequency monopole data, and high frequency monopole data (Column 4, Line 35 to Column 5, Line 40; Column 7, Lines 15-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claims 74 and 76 above, and further in view of Bose.

With regard to claim 4, Kimball does not disclose that display includes homogeneous and inhomogeneous characteristics of the dispersion. Bose teaches a method of sonic logging. Bose teaches that the information displayed in an SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging that include homogenous and inhomogeneous characteristics of the dispersion curves in order to look for damage to the formation near the borehole.

With regard to claim 5, Kimball does not disclose that the information displayed in the display includes isotropic and anisotropic characteristics of the dispersion curve. Bose teaches information displayed in an SFA log display includes isotropic and anisotropic characteristics of the dispersion curve (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging data that include isotropic and anisotropic characteristics of the dispersion

curves in order determine properties of the formation relating to shear slowness around the borehole.

With regard to claim 58, Kimball does not disclose that information displayed includes homogeneous and inhomogeneous characteristics of the dispersion. Bose teaches a method of sonic logging. Bose teaches that the information displayed in an SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging that include homogenous and inhomogeneous characteristics of the dispersion curves in order to look for damage to the formation near the borehole.

With regard to claim 59, Kimball does not disclose that the information displayed in the display includes isotropic and anisotropic characteristics of the dispersion curve. Bose teaches information displayed in an SFA log display includes isotropic and anisotropic characteristics of the dispersion curve (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in the display from sonic logging data that include isotropic and anisotropic characteristics of the dispersion curves in order determine properties of the formation relating to shear slowness around the borehole.

The "wherein the information displayed" clauses of claims 58 and 59 are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181

USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon (information displayed) does not serve to limit an apparatus claim.

Claims 12-13 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claims 74 and 76 above, and further in view of Kimball (Geophysics March-April 1998 – referred to in this action as Kimball (Geophysics 1998) to distinguish from the Kimball reference used for claim 74).

With regard to claim 12, Kimball does not disclose displaying an overlay of estimated wave slowness information onto the displayed dispersion curve. Kimball (Geophysics 1998) teaches displaying estimated wave slowness as an overlay onto an dispersion curve display (Figs. 5-6). It would have been obvious to modify Kimball to include a display as taught by Kimball (geophysics 1998) in order to compare the determined slowness from different methods on the displays.

With regard to claim 13, Kimball discloses that the estimated wave slowness information includes information from the group consisting of fast estimated shear wave slowness, estimated compressional wave slowness, and estimated Stoneley wave slowness (Column 7).

With regard to claim 60, Kimball does not disclose means for generating, using slowness-versus-frequency dispersion curve information, estimated wave slowness information. Kimball does not disclose means for displaying an overlay of estimated wave slowness information onto the displayed dispersion curve. Kimball (Geophysics 1998) teaches means for generating and displaying estimated wave slowness as an overlay onto an dispersion curve display (Figs. 5-6). It would have been obvious to modify Kimball to include a means for a display as taught by Kimball (geophysics 1998) in order to compare the determined slowness from different methods on the displays

Claims 14-17 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claims 74 and 76 above, and further in view of Stark

With regard to claim 14, Kimball does not disclose that the display further comprises a navigable mechanism configured or designed to link the display to additional logging information associated with selected depths. Stark discloses the use of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in

order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 15, Kimball discloses that the display further includes depth specific sonic logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Kimball does not disclose that the information relates to a depth selected by the navigable mechanism. Stark discloses selecting data by use of a mechanism (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 16, Kimball does not disclose that the navigable mechanism is further configured or designed to automatically scroll through the display in a manner which causes additional depth specific sonic logging information to automatically be displayed. Stark discloses that the mechanism (mouse) can continuously provide points as the mouse is moved in order to provide a continuous "movie" style presentation. It would have been obvious to modify Kimball to include using a mouse that continuously provides information about the part of the display it is placed over in order to be able to see information about any part of the display on which the mouse is placed in order to compare it to other parts of the display.

With regard to claim 17, Kimball does not disclose that the display further comprises a navigable mechanism configured or designed to link the display to additional depth specific logging information associated with selected depths. Kimball

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discloses that the display further includes depth specific display information relating to selected characteristics of the depth specific logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Stark discloses the use of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 61, Kimball does not disclose that the displaying means further comprise a navigable means for linking the displaying means to depth specific logging information associated with selected depths. Kimball discloses that the display further includes depth specific display information relating to selected characteristics of the depth specific logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Stark discloses the use of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer means as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

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Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball in view of Stark as applied to claim 17 above, and further in view of Kimball (Geophysics March-April 1998)

With regard to claim 18, Kimball (Geophysics 1998) teaches that the depth specific display information is displayed concurrently with the slowness-versus-frequency dispersion curve for each depth (Figs. 5-6). It would have been obvious to modify Kimball to include displaying the information concurrently dispersion curve for each depth information in order to track slowness with the depth along the borehole.

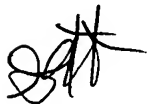
Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SAH



JACK KEITH
SUPERVISORY PATENT EXAMINER